

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
23 October 2003 (23.10.2003)

PCT

(10) International Publication Number  
**WO 2003/088680 A3**

(51) International Patent Classification<sup>7</sup>: **G09G 3/20**

David [GB/GB]; Flat 4, 109 Sandford Road, Birmingham, West Midlands B13 9BU (GB). BOIREAU, Olivier [FR/GB]; 19 Oxford Drive, Birmingham, West Midlands B27 6SH (GB).

(21) International Application Number: PCT/GB2003/001611

(74) Agent: WRAY, Antony, John; Optimus, Grove House, Lutyns Close, Chineham Court, Basingstoke, Hampshire RG24 8AG (GB).

(22) International Filing Date: 14 April 2003 (14.04.2003)

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

(26) Publication Language: English

(30) Priority Data:  
0208472.1 12 April 2002 (12.04.2002) GB

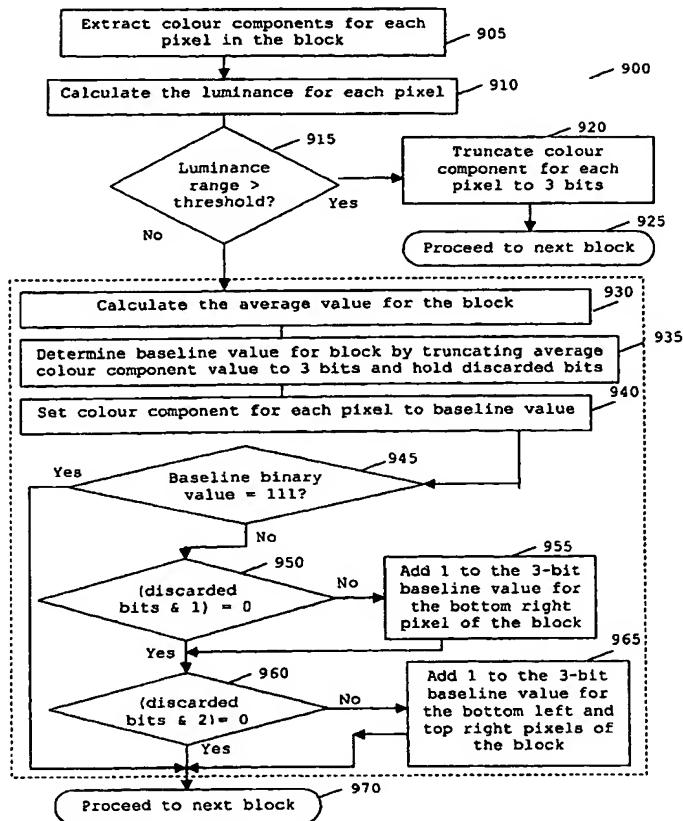
(71) Applicant (*for all designated States except US*): SENDO INTERNATIONAL LIMITED [CN/CN]; 1601-3 Kinwick Center, 32 Hollywood Road, Central, 068645 Hong Kong (CN).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): AUSTIN, Philip,

*[Continued on next page]*

(54) Title: IMAGE OR VIDEO PROCESSING



(57) Abstract: A method (900) for processing image or video data for a display includes separating (905, 920) a stream of image or video data into a block of pixels. Each pixel within the block of pixels comprises a first sequence of pixel bit values for a colour component of the image or video and one or more bits to be discarded. The method comprises determining (950, 960) for the block of pixels, a binary value of the one or more bits to be discarded, and modifying (955, 965) the first sequence of pixel bit values as a block of pixels, in response to the determined binary value to form a reduced number of pixel bit values to represent the colour component of a pixel within the block of pixels. This provides the advantage in that colour information typically lost when discarding pixel bits is reused to improve the image quality.



European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17:**

- *as to the identity of the inventor (Rule 4.17(i)) for all designations*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designation US*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designation US*

**Published:**

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:  
26 February 2004

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/01611

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 G09G3/20

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G09G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, EPO-Internal, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 05, 14 September 2000 (2000-09-14) -& JP 2000 056716 A (SHINEI KK;UEDA SHINICHI), 25 February 2000 (2000-02-25) abstract paragraphs '0013!-'0019!, '0025!-'0034!, '0042!-'0047!; figures 1-3 paragraphs '0051!-'0054!, '0065!-'0072!; figures 6,10,11 paragraphs '0077!-'0080! paragraph '0093!; figures 12,13 paragraphs '0150!-'0156!, '0164!-'0167! -& US 6 476 824 B1 (SUZUKI ET AL.) 5 November 2002 (2002-11-05) abstract column 1, line 6 - line 11 column 1, line 48 - line 56	1-7,9-16
Y	abstract paragraphs '0013!-'0019!, '0025!-'0034!, '0042!-'0047!; figures 1-3 paragraphs '0051!-'0054!, '0065!-'0072!; figures 6,10,11 paragraphs '0077!-'0080! paragraph '0093!; figures 12,13 paragraphs '0150!-'0156!, '0164!-'0167!	8
X,P	-& US 6 476 824 B1 (SUZUKI ET AL.) 5 November 2002 (2002-11-05) abstract column 1, line 6 - line 11 column 1, line 48 - line 56	1-16

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

\* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*&\* document member of the same patent family

Date of the actual completion of the International search

3 December 2003

Date of mailing of the International search report

18/12/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl  
Fax: (+31-70) 340-3016

Authorized officer

Corsi, F

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 03/01611

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	column 2, line 25 - line 63 column 4, line 32 -column 5, line 55; figures 2-4 column 6, line 22 -column 8, line 8; figures 5,6 column 9, line 49 -column 12, line 3; figures 14-16 column 15, line 32 -column 16, line 32; figures 23-26 column 17, line 15 - line 26; figure 30 column 18, line 3 - line 54; figures 22,31 column 19, line 42 - line 49 ----	
X	US 5 734 369 A (LAPIDOUS EUGENE ET AL) 31 March 1998 (1998-03-31) abstract column 2, line 4 - line 43 column 3, line 1 - line 28 column 5, line 33 -column 6, line 17; figure 1 column 6, line 43 -column 7, line 18 column 8, line 36 - line 47 ----	1,5,6, 11-16
X	US 5 184 124 A (MOLPUS J LANE ET AL) 2 February 1993 (1993-02-02) abstract column 2, line 23 -column 3, line 40; figure 1 column 8, line 5 - line 48; figure 6 ----	1,5-7, 11-16
Y	US 6 288 698 B1 (ISHII TAKATOSHI ET AL) 11 September 2001 (2001-09-11) abstract column 1, line 12 - line 16 column 4, line 36 - line 54; figure 5C column 5, line 31 - line 38; figure 6B ----	8
A	WO 98 10405 A (UNITED TECHNOLOGIES AUTOMOTIVE) 12 March 1998 (1998-03-12) abstract page 1, line 18 - line 31 page 2, line 19 -page 3, line 23; figures 1,2 page 4, line 2 - line 20 ----	9

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International Application No

PCT/GB 03/01611

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
JP 2000056716	A	25-02-2000	NONE			
US 5734369	A	31-03-1998	NONE			
US 5184124	A	02-02-1993	NONE			
US 6288698	B1	11-09-2001	NONE			
WO 9810405	A	12-03-1998	WO 9810405 A1			12-03-1998